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July 17, 2006

Mr. Mark Verhey Humboldt County Department of Public Health 100 H Street Eureka, California 95501

RE: Quarterly Status and Remediation Summary Report – First Quarter 2006

SECOR Project No.: 77CP.02021.00.0304

Dear Mr. Verhey:

On behalf of ConocoPhillips, SECOR International Incorporated is forwarding the quarterly summary report for the following location:

Service Station	<u>Location</u>
Former 76 Service Station No. 01106	1693 Central Avenue, McKinleyville,
LOP # 12698	California

If you have questions or comments regarding this quarterly summary report, please do not hesitate to contact me at (916) 861-0400.

Sincerely,

**SECOR International Incorporated** 

Sean Coyle Project Manager

Attachment: SECOR's Quarterly Status and Remediation Summary Report - Second

Quarter 2006

cc: Mr. Thomas Kosel, ConocoPhillips

### QUARTERLY STATUS AND REMEDIATION REPORT SECOND QUARTER 2006

Former 76 Station No. 01106 LOP#12698 1693 Central Avenue McKinleyville, California

City/County ID #: McKinleyville
County: McKinleyville
Humboldt

#### SITE DESCRIPTION

The subject site is located on the corner of Central Avenue and Sutter Road in McKinleyville, California. The site operated as retail service station from 1982 until 1999. Currently, a retail drive-up espresso kiosk is located at the site.

#### **PREVIOUS ASSESSMENT**

In 1999, Tosco Marketing Company (now ConocoPhillips) removed three 10,000-gallon gasoline underground storage tanks (USTs) and associated piping and dispensers. Results of laboratory analyses of samples collected during the work indicated that hydrocarbons were present in soil and groundwater beneath the site.

In February 2000, at the request of Tosco, Environmental Resolutions Inc. (ERI) performed a soil and groundwater investigation including the installation of four on-site groundwater monitoring wells (MW-1 through MW-4) and one on-site boring. Results of laboratory analyses of soil samples collected during the investigation indicated that hydrocarbons were not present in soil at concentrations at or above laboratory reporting limits. Based on these data, the area of affected soil at the site is delineated. The results of laboratory analyses of groundwater samples indicated that dissolved hydrocarbons were present in groundwater: affected groundwater was not delineated at the site.

In October 2000, ERI installed one on-site and four off-site groundwater monitoring wells (MW-5 through MW-9).

In February 2003, ERI submitted a Corrective Action Plan (CAP) recommending the installation of an ozone microsparge system.

In May 2003, sparge wells AS-1 through AS-7 were installed at the site.

In October 2003, a remedial system design utilizing ozone microsparging was prepared. In January 2004, an ozone injection system was installed at the site by Miller Brooks Environmental, Inc., with SECOR performing operations and maintenance activities. The ozone injection system consists of

a panel-mounted KVA C-Sparge™ System designed to produce 4 grams per hour (0.009 pounds per hour) of ozone. The system injects to seven ozone sparge wells (AS-1 through AS-7).

#### SENSITIVE RECEPTORS

In October 2000, ERI performed an underground utility survey, and performed a door-to-door groundwater receptor survey within a 1,100-foot radius of the site. The door-to-door groundwater receptor survey revealed seven potential groundwater receptors, all of which are water supply wells. Four of these wells were reported as inactive, one well was reported as active, and the status of the remaining two wells is unknown. Detailed well information such as well use, total depth, and perforated screen interval was not available. According to ERI the closest active well to the site is located approximately 1,100 feet southwest (crossgradient) of the site. The door-to-door groundwater receptor survey did not reveal any basements with groundwater sumps, surface water bodies, or other potential groundwater receptors.

#### MONITORING AND SAMPLING

The site has been monitored and sampled since the first quarter 2000. Between the first quarter 2000 and the present, monitoring and sampling has been conducted quarterly. Currently, seven wells (MW-1 through MW-3, MW-5 through MW-7, and MW-9) are sampled quarterly. MW-4 and MW-8 are sampled semiannually. Samples are analyzed for total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additionally, samples are analyzed for nitrate, sulfate, carbon dioxide, ferrous iron, methane, alkalinity, manganese, biochemical oxygen demand, and chemical oxygen demand. Results are discussed below and are summarized in TRC's *Quarterly Monitoring Report, April through June 2006* dated June 12, 2006 (Attachment 1).

#### **DISCUSSION**

During the second quarter 2006, depth to groundwater ranged between 3.18 and 10.45 feet below the top of the casing (toc), which was in the range of historical levels. The direction of groundwater flow was toward the northwest at a gradient of 0.04 foot per foot (ft/ft).

Evaluation of dissolved concentrations through the second quarter 2006 indicates that the highest concentrations of MtBE were detected in off-site well MW-2 at 13  $\mu$ g/L. During second quarter 2006, TPHg and benzene were not detected at or above method contamination limits (MCLs) in any of the wells. These concentrations have reduced significantly from concentrations reported during the fourth quarter 2005. Concentrations of TPHg and MtBE have fluctuated within historical levels over the past four years, but have generally decreased over time. The dissolved plume remains defined by the existing monitoring well network.

The existing ozone sparge (OS) well network appears to be successfully remediating hydrocarbons and fuel oxygenates dissolved in the groundwater downgradient of the former USTs. Reported concentrations in MW-2 increased to  $6,000~\mu g/L$  TPHg and  $1,600~\mu g/L$  MtBE during third quarter

2005 and then decreased to below MCLs for the past two consecutive quarters. Environ Strategy Consultant, Inc. (ES) will continue to operate, and SECOR will evaluate the effectiveness of the OS system during the third quarter 2006.

#### **CHARACTERIZATION STATUS**

Contamination in soil and groundwater has been adequately delineated.

#### REMEDIAL PERFORMANCE SUMMARY

#### **Ozone Injection Operation**

The ozone injection system consists of a wall-mounted KVA C-Sparge™ System, model 5020, designed to produce up to 4 grams (0.009 pounds) per hour of ozone. The system is programmed to inject to each of the seven injection wells for ten minutes, cycling eighteen times per day resulting in 87.5 percent (21 hours/day) operation.

During the second quarter 2006, the ozone injection system was operational for a total of 2,037 hours resulting in 100 percent operability. On September 9, 2005, it was discovered that the business that supplied power to the remediation system had closed for business and PG&E had shut the power off. On April 3, ES re-established power to the system and conducted a system start up. Cumulatively, the ozone injection system has operated for 7,504 hours and has injected a total of approximately 67.5 pounds of ozone into the subsurface. Operating data for the ozone injection system, operating hours, pressure readings and field data sheets are included in ES's Second Quarter 2006 Ozone Injection System O&M Report (Attachment 2).

#### **Monthly Groundwater Sampling**

Monthly groundwater samples are collected from monitoring wells MW-2 and MW-4 and analyzed for TPHg, BTEX, and MtBE. Results of the monthly groundwater sampling events are summarized in Attachment 2. Oxidation-reduction potential (ORP) and dissolved oxygen (DO) measurements were also collected monthly, and are included in Attachment 2. A site plan is included in Attachment 2 and concentration versus time graphs for dissolved TPHg, benzene, and MtBE in monitoring wells MW-2 and MW-4 are provided in Attachment 2, respectively. Certified laboratory analytical reports and chain-of-custody documentation for the groundwater monitoring events conducted during the current quarter are provided in Attachment 2.

#### **WASTE DISPOSAL**

The volume of purged groundwater generated and disposed of during the quarterly groundwater monitoring event is documented in TRC's *Quarterly Monitoring Report, April through June 2006* dated June 12, 2006 (Attachment 1).

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#### RECENT SUBMITTALS/CORRESPONDENCE

Submitted – Quarterly Status and Remediation Summary Report – First Quarter 2006, dated April 23, 2006.

#### THIS QUARTER ACTIVITIES (Second Quarter 2006)

- 1. TRC conducted quarterly groundwater monitoring and sampling.
- 2. Environ Strategy Consultants, Inc. (ES) conducted operation and maintenance of the ozone system.
- 3. SECOR prepared and submitted the first quarter 2006 quarterly summary and quarterly remedial performance summary report.

#### **NEXT QUARTER ACTIVITIES (Third Quarter 2006)**

- 1. TRC will conduct quarterly groundwater monitoring and sampling.
- 2. ES will continue operation and maintenance of the ozone system.
- 3. SECOR will prepare and submit quarterly summary report.

#### **LIMITATIONS**

This report has been prepared for the exclusive use of ConocoPhillips and its representatives as it pertains to the property located at 1693 Central Avenue, McKinleyville, California. The evaluation of subsurface conditions at the site for the purpose of this investigation is inherently limited due to the number of points of investigation. There are no representations, warranties, or guarantees that the results are representative of the entire site. Data from this report reflects the conditions at locations at a specified time. No other interpretation, representations, warranties, guarantees, express or implied, are included or intended in the report findings. SECOR makes no warranties or guarantees for the groundwater monitoring report (Attachment 1) prepared by TRC or for the vapor extraction system O&M report (Attachment 2) prepared by ES.

Sincerely,

**SECOR International Incorporated** 

Ed Simonis, P.G. Senior Geologist

Ben McKenna Project Geologist

#### Attachments:

Attachment 1 – TRC's *Quarterly Monitoring Report – April through June 2006*, dated March 23, 2006

Attachment 2 – Environ Strategy's Second Quarter 2006 Ozone Injection System O&M Report dated July 5, 2006

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## ATTACHMENT 1 TRC QUARTERLY MONITORING REPORT APRIL THROUGH JUNE 2006

Quarterly Status and Remediation Summary Report Former 76 Station No. 1106 1693 Central Ave McKinleyville, California

# Please Refer To: 2Q06 QMR TRC

#### ATTACHMENT 2 ENVIRON STRATEGIES SECOND QUARTER 2006 OZONE INJECTION SYSTEM O&M REPORT

Quarterly Status and Remediation Summary Report Former 76 Station No. 1106 1693 Central Ave McKinleyville, California

## Please Refer To: 2Q06 Ozone Injection System O&M Report - ES